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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,538	11/21/2003	Atsushi Hikita	OHT-0022	7981

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EXAMINER

MAZUMDAR, SONYA

ART UNIT	PAPER NUMBER
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1734

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/717,538	Applicant(s) HIKITA, ATSUSHI	
	Examiner Sonya Mazumdar	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-18 is/are pending in the application.
- 4a) Of the above claim(s) 12-18 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 11 is/are allowed.
- 6) ☒ Claim(s) 1 and 3-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. After Notice of Appeal filed January 25, 2007, prosecution is hereby reopened.

Response to Arguments

2. Applicant's arguments, see pages 1 through 5, filed January 25, 2007, with respect to the rejection(s) of claims 1 and 3 through 11 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Tang et al. (US 2003/0026957)

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 1, 3, 8, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 11, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

Regarding claim 3, the term "many" is a relative term which renders the claim indefinite. The term "many" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

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Regarding claim 8, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1, 4, 7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al. (US 2003/0026957) in view of Nishi (US 6,451,143).

With respect to claims 1, 7, and 9, Tang et al. teach decorating a plastic substrate with a porous, image-receiving layer comprising a film-forming polymeric binder to bind inorganic pigments to be used as matting agents, such as silica (abstract; paragraphs 0002, 0019, 0024, and 0037). The image-receiving layer is backed by a releasable sheet to form an image transfer layer (paragraphs 0025 and 0028). First, a mirror image of a desired image or character is printed on the image-receiving layer by

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an imaging device, such as an inkjet printer (paragraph 0036). The image transfer layer is laminated onto a substrate, and the releasable sheet is peeled resulting in an imaged substrate. (paragraphs 0041 and 0042)

Tang et al. teach providing a barrier layer to act as a protective layer over the imaged layer after transfer (paragraph 0030), but do not teach curing a transparent resin layer over an imaged layer. Nishi teaches placing a transparent UV reactive hardening resin (7) after graphic printing (9) on the back of the resin key top, then irradiating the key top under UV rays (column 3, lines 17-19; column 5, lines 21-28; Figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to cure a transparent resin to form a transparent resin layer over the colored layer. One would have been motivated to do so to provide protection for the indicator layer and increase durability for the substrate.

With respect to claim 4, Tang et al. do not teach curing a transparent resin liquid with an active energy ray after deposition onto the colorant layer. Nishi teaches placing a transparent UV reactive hardening resin with the imaged layer on the back of the resin key top, then irradiating the key top under UV rays (column 3, lines 17-19; column 5, lines 21-28; Figure 2).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to cure a transparent resin liquid with an active energy ray after deposition onto the colorant layer. One would have been motivated to do so to choose a more economical drying process.

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With respect to claim 7, Hayashizaki teaches transferring the colored layer (4) onto the back surface of the resin object (6) formed of a transparent resin. (paragraphs 0026 and 0034; Figure 2)

With respect to claim 10, Tang et al. in view of Nishi teach applying graphics to a key top main body (abstract; Figure 2).

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al. in view of Nishi as applied to claim 4 and further in view of Fritz et al. (US 4,082,635)

The teachings of claim 4 are as described above.

Although Nishi teaches placing an UV reactive hardening resin with the imaged layer on the back of the resin key top, then irradiating the key top under UV rays (column 3, lines 17-19; column 5, lines 21-28; Figure 2), the combined teachings of Tang et al. and Nishi do not teach leaving the transparent resin for a predetermined time period determined according to a viscosity of the transparent resin liquid. Fritz et al. teaches dependence of curing times on the viscosity of a UV-light curable adhesive composition. (column 1, lines 60-63).

It would obvious to one having ordinary skill in the art at the time the invention was made to have knowledge of the viscosity of the transparent resin and determine a curing time. One would have been motivated to do so for easier processing and producing a cured material that is not brittle.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al. in view of Nishi as applied to claim 1 and further in view of Ingaki et al. (US 4,937,118)

The teachings of claim 1 are as described above.

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Although Nishi teaches placing a transparent UV reactive hardening resin with the imaged layer on the back of the resin key top, then irradiating the key top under UV rays (column 3, lines 17-19; column 5, lines 21-28; Figure 2), the combined teachings of Tang et al. and Nishi do not teach the resin having a certain viscosity or curing it for a certain period of time. Looking at the applicant's definition in the specification, the transparent resin is an active energy ray curing type resin (page 8, paragraph 0019). Ingaki et al. teaches curing an active energy ray-curable compound under UV light for 15 minutes at 2610 cps (2.61 pascal seconds). (column 18, lines 29-31)

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to use a resin having a viscosity limits and curing time limits. One would have been motivated to do so in the effort to save time and improve production in the manufacture of key tops.

3. Claim 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang et al. in view of Nishi as applied to claim 1 above, and further in view of Shimuzu et al. (US 6,196,738)

The teachings of claim 1 are as described above.

With respect to claim 3, Tang et al. in view of Nishi do not specifically teach having an image-receiving layer with many longitudinal pores. However, Shimuzu et al. teach an on-demand printed layer (4) that is provided with a punched or perforated character (column 14, lines 60-67; Figure 2B).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an image-receiving layer perforated with many pores as

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Shimuzu et al. taught and one would have been motivated to do so if desired to illuminate only an image or character by back lighting.

With respect to claim 8, Tang et al. in view of Nishi do not specifically teach forming another colored layer for complementing an image on an image-receiving layer. Shimuzu et al. teach providing a silver-colored layer (6) on the rear of an on-demand printed layer (4) (abstract; Figure 2B).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form another colored layer for complementing an image on an image-receiving layer as Shimuzu et al. taught and one would have been motivated to do so to have a light-blocking layer to eliminate deterioration in the image's or character's visibility in the key top (column 5, lines 45-55).

Allowable Subject Matter

4. Claim 11 is allowed.

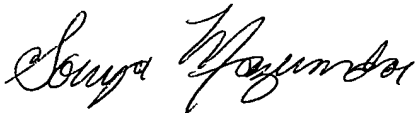
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sonya Mazumdar whose telephone number is (571) 272-6019. The examiner can normally be reached on 8AM-4:30PM.

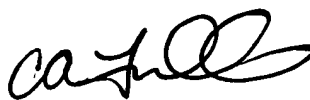
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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SUPERVISORY PATENT EXAMINER

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